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09/223,660	12/30/1998	WEI MING HU	237/117	1277

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EXAMINER

VO, TIM T

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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Paper No. 20

Application Number: 09/223,660

Filing Date: December 30, 1998

Appellant(s): HU ET AL.

Erin C. Ming
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 4/11/03.

(1) *Real Party in Interest*

A statement identifying the real party in interest is contained in the brief.

(2) *Related Appeals and Interferences*

A statement identifying the related appeals and interferences which will directly affect or be directly affected by or have a bearing on the decision in the pending appeal is contained in the brief.

(3) *Status of Claims*

The statement of the status of the claims contained in the brief is correct.

(4) *Status of Amendments After Final*

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) *Summary of Invention*

The summary of invention contained in the brief is correct.

(6) *Issues*

The appellant's statement of the issues in the brief is correct.

(7) *Grouping of Claims*

Appellant's brief includes a statement that claims 1-72 stand or fall together.

(8) *Claims Appealed*

The copy of the appealed claims contained in the Appendix to the brief is correct.

(9) *Prior Art of Record*

5,485,573	Tandon	01-1996
6,195,760	Chung et al.	02-2001

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4,164,017

Randell et al.

08-1979

(10) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claims 1-72 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Tandon patent number 5,485,573 (Tandon) in view of Chung et al. patent number 6,195,760 (Chung) further in view of Randell et al. patent number 4,164,017 (Randell).

This rejection is set forth in prior Office Action, Paper No. 13.

Claims 1-72 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Tandon patent number 5,485,573 (Tandon) in view of Chung et al. patent number 6,195,760 (Chung) further in view of Randell et al. patent number 4,164,017 (Randell).

As for claims 1, 12, 21, 22, 41 and 52, Tandon teaches a method of diagnosing a computer system after a failure (see fig 2, 6 and col 1 lines 20-25 of the specification), comprising:

Tandon teaches a system having multiple processors executing application programs such as data base management systems (DBMS) (see figure 1 elements 10, 24). Error occurs while the DBMS is operating on a host processor, the host processor saved the data for later analysis. Meanwhile, the other host processors will continue to process transactions (see column 2 lines 3-8).

diagnosing failure by analyzing one or more resources from the first set of system resource (see column 2 lines 3-5 of the specification);

Tandon does not expressly teach accessing the computer system by utilizing a second set of system resource. However, Chung teaches such teaching that is when a

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primary computer is indicated failure then a backup computer becomes a primary (see abstract and col 1 lines 36-67 of the specification).

Therefore, it would have been obvious to a person of an ordinary skill in the art at the time the invention was made to have combined the teachings of Chung into the teachings of Tandon because Chung provides Tandon a backup system which is found reliable system, thereby it saves the cost for computer downtime (see col 1 lines 33-35 of Chung).

Tandon and Chung do not expressly teach preserving in place the state of a first set of system resources after the failure occurs in the computer system. However, Rendell teaches a method for recovery from a failure with a block of a computer program (as admitted by the applicant from the paper 8). Further, Randell teaches preserving the state of each item of information after error occurs (see column 1 lines 47-50 of Randell). It would have been obvious to include such teaching preserving the state of a computer system after the failure occurs into the system of Tandon and Chung to diagnose and analyze the reason for failure and thereby preventing errors in future.

As for claims 2, 13, 23, 33, 42, and 53, Tandon teaches maintaining one or more lists of the first set of system resources (see col 2 lines 40-43 of the specification).

As for claims 3, 14, 24, 34, 43 and 54, Tandon teaches one or more data lists a linked lists (see fig 1 elements 10 and col 3 lines 20-38 of the specification).

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As for claims 4, 15, 25, 35, 44, and 55, Tandon teaches first set of system resources comprise processing entities (see fig 1 element 24 and fig 2 of the specification).

As for claims 5, 16, 26, 36, 45 and 56, Tandon teaches in which the processing entities comprises processes which are categorized into process types (see fig 2 steps 54-68 of the specification).

As for claims 6, 17, 27, 37, 46 and 57, Tandon teaches suspending the state of one or more of the processes in the first set of system resources (see col 6 lines 63-67 of the specification).

As for claims 7, 18, 28, 38, 47 and 58, Tandon teaches one or more processes to suspend are suspended by being entered into an idle loop (see col 4 lines 2-10 of the specification).

As for claims 8-9, 19, 29-30, 39, 48-49 and 59, Tandon teaches one or more processes to suspend are suspended by an operating system scheduler and selected based upon their process type (see col 6 lines 63-67 and fig 5 of the specification).

As for claims 10, 20, 31, 40, 50 and 60, Tandon teaches system resources that have been set aside for diagnostic purpose (see col 2 lines 3-5 of the specification).

As for claims 11, 32 and 51, Tandon teaches system resources comprises redundant hardware/software components (see col 3 lines 50-59 of the specification).

As for claims 61, 63, 65, 67, 69 and 71, they are rejected as applied above independent claims. Further, Randell teaches preserving states.

As for claims 62, 64, 66, 68, 70 and 72, Tandon teaches a host saved data for later analysis thus does not require any copying of the state of the first set of system resources (see column 2 lines 3-5 of the specification).

(11) Response to Argument

1. The present invention discloses in figure 1. A system 102 supporting fail-over procedures. A primary server 104 and a backup server 108 providing access application database to client 110. The primary server 104 runs the database management system "DBMS" 114, and the backup server 108 runs DBMS 116. When a failure occurs on the primary server 104, fail-over techniques can be implemented to move all application requests to the backup server 108 and the backup server 108 acts as a primary server to continue to support client 110 (specification page 7 line 12 to page 8 line 10).

The present invention provides a method to preserve the state of resources on the primary system 114 during the fail-over procedure to be examined to perform a diagnostic analysis of the failure (specification page 8 lines 11-14).

2. Analyzing independent claim 1. "A method of diagnosing a computer system after a failure, comprising:" (The preamble does not clarify how the "diagnosing" performs. For this reason, the "diagnosing" term is interpreted such a broadest term i.e. check for errors after a failure, indication of computer failure after a failure etc.).

3. "preserving in place the state of a first set of system resources after the failure occurs in the computer system." ((the breadth of this is limitation, a primary computer having resources such as network and I/O resources is running and when there is a

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failure, the previous state of the primary computer would then save into a particular location of memory (in place) after a failure). Appellant has never defined what the phrase "in place" means in the claims. Claims are given their broadest reasonable interpretation consistent with the specification. It is proper to use the specification to interpret what the applicant meant by a word or phrase recited in the claim. However, it is not proper to read limitations appearing in the specification into the claim when these limitations are not recited in the claim. Therefore, it would not be proper for the examiner to give words of the claim special meaning when no such special meaning has been defined by the applicant in the written description. Furthermore, it would not be proper for the examiner to allow a claim and issue the applicant with an examiner's statement of reasons for allowance setting forth the special definition given to the words of the claim when no such special definition has been defined by the applicant in the written description). Thus, the examiner's interpretation of the claim scope is consistent with the term used.

4. "and accessing the computer system by utilizing a second set of system resource." (using a secondary computer having computer resources such as network and I/O resources after the primary computer fails).

5. "and diagnosing the failure by analyzing one or more resources from the first set of system resources." ("diagnosing the failure" of the primary computer resources after a failure. The phrase "diagnosing the failure" does not specify any particulars of diagnosing activity. It defines a minimum of diagnosing that a failure has occurred i.e., check for errors after a failure, indication of computer failure after a failure, etc.).

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6. Examiner applies Tandon (5,485,573) in view of Chung (6,195,760) and further in view of Randell (4,164,017) for rejecting claim 1.

7. Tandon teaches a multi-host data processing environment, wherein in a host comprising one or more resources such as DBMS and I/O 12, 14. Tandon teaches DBMS operating on a first host performing consistency checking to detect the occurrence of an error. The host then utilizing the DBMS notifies the user and other host of the error condition. Upon receipt of the message indicative of the error condition, each of the receiving DBMS systems saves to a file the contents of memory allocated on the host. Tandon teaching is in the same field of the present invention. Tandon teaches a multi-host data processing environment, wherein in a host comprising one or more resources such as DBMS and I/O resources (see figure 1 and abstract), which is equivalent to figure 1 of the present invention.

8. Tandon teaches a method of diagnosing a computer system after a failure (see figures 2, 6, and column 2 lines 3-5, wherein figures 2, 6 discloses diagnosing errors on the host), and diagnosing the failure by analyzing one or more resources from the first set of system (see figures 2, 6, and column 2 lines 40-60 and column 2 lines 3-5, wherein the figure 2 discloses diagnosing resources in the host system, steps 58, 70 discloses three classes of errors, wherein class 1 error indicates inconsistency in I/O operation 18 (see column 4 line 60-67), and saved the necessary data for later analysis).

9. Tandon does not expressly teach accessing the computer by utilizing a second set of system resource. This means a fail-over (when a primary computer fails the

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backup computer takes over and acts like a primary computer). However, Chung teaches when a primary computer is indicated failure then a backup computer becomes a primary (see abstract and column 1 lines 36-67 of Chung). Therefore, it would have been obvious to a person of an ordinary skilled in the art at the time the invention was made to have combined the teachings of Chung into the teachings of Tandon because Chung provides Tandon a backup system which is found reliable system, thereby it saves the cost for computer downtime as suggested by Chung column 1 lines 33-35.

10. Tandon and Chung do not teach preserving in place the state of a first set of system resource after a failure occurs in the computer system. This means a first set of system resources as being a primary computer running database DBMS with computer resources such as network and I/O resources that would preserve its previous state in place after the failure. However, Randell teaches a computer system which performs actions in order to manipulate the states or values of items of information that is a program to be carried out on a computer system is constructed from identifiable operations for error recovery (see column 1 lines 5-50). These citations are equivalent to the present invention that is preserving in place the state of a first set of system resources after the failure occurs in the computer system. Therefore, it would have been obvious to include such teaching preserving the state of a computer system after the failure occurs into the system of Tandon and Chung to diagnose and analyze the reason for failure and thereby preventing errors in future. (For more clarification, see below).

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11. Randell teaches a computer program having provision for error recovery is constructed from a number of identifiable operation states after a failure occurs in the computer system. Randell teaches a program that forms a nested set of blocks and it is desired to restore the apparatus to its previous state in place by preserving the state at the beginning of each block. Further, column 1 lines 25-50, Randell describes each beginning of blocks in a program indicates a state of operation in the computer system and to determine whether there is a need to preserve that state of operation. For example, to preserve the previous state in place of operation after a failure, Randell teaches each of a plurality of items information at the beginning of each block wherein the item information change state during such block so that the condition prevailing at the beginning of the block can be restored by having a first memory means for storing the most recent state of each of the item information, second memory means for storing previous states of the item information (see column 1 lines 25-50). This process is saving previous state of the computer in place into a particular location of memory, which discussed above in paragraph number 3.

Thus, contrary to appellant's argument, it is evident that Randell does teach "preserving in place the state of a first set of system resources after the failure occurs in the computer system" (column 1 lines 25-50 of Randell) and it would have been obvious to combine Randell into Tandon and Chung in accordance with the motivation set forth above.

For the above reasons, it is believed that the rejections should be sustained.

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Respectfully submitted,

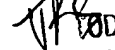


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June 30, 2003

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